

# ***Color Video Projector***

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Operating Instructions

**GB**

**VPH-V20M/V20U  
VPH-V22M**



# STAATL. GEWERBEAUFSICHTSAMT STUTTGART

Zentrale Stelle für die Vollzugsunterstützung (ZSV)

Sony International (Europe) GmbH  
Stuttgart Technology Center  
Stuttgarter Straße 106  
  
70736 Fellbach

Stuttgart, den 02.07.1998  
Durchwahl: 1869-638  
Aktenzeichen: ZSV 4677.21 Bm  
Bearbeiter: Herr Böhm

## Zulassungsschein Nr. BW/445/94/Rö

Gemäß § 10 der Röntgenverordnung vom 08.01.1987 (BGBl. I S. 114) wird die Zulassung der Bauart durch den Bauartzulassungsbescheid vom 22.04.1994 mit den Nachträgen 1 vom 02.04.1998 und 2 vom 02.07.1998 für die nachfolgend aufgeführten Störstrahler bescheinigt:

Gegenstand	:	Color Video Projector
Firmenbezeichnung	:	Sony Typ: VPH-1044 QM VPH-1001 QM VPH-V20M VPH-V20E VPH-V22.
Bildröhre	:	Sony Typ: 07 MS(R) 07 MS(G) 07 MS(B)
Betriebsbedingungen	:	Hochspannung max 33,3 kV Strahlstrom 2,5 mA
Hersteller (Produktionsstätte)	:	1. Sony INY Quality Control Department Ichinomiya, Aiti-Prefecture, Japan 2. SDCP-DSM (Display System Manufacturing) Quality Assurance Department San Diego, California, USA
Befristung	:	bis 22.04.2004.

### Für den Strahlenschutz wesentliche Merkmale:

1. Die Art und Qualität der Projektionsröhren,



2. die der Hochspannungserzeugung und -stabilisierung dienenden Bauelemente.

Auflagen:

1. Die Color Video Projectoren sind einer Stückprüfung daraufhin zu unterziehen, ob sie bezüglich der für den Strahlenschutz wesentlichen Merkmale der Bauartzulassung entsprechen.

Die Prüfung muß umfassen:

- a) Kontrolle der Hochspannung an jedem einzelnen Gerät,
- b) Messung der Dosisleistung nach Festlegung im Bauartzulassungsscheid.

2. Jedem Erwerber eines Color Video Projectors ist ein Abdruck des Zulassungsscheins auszuhändigen, auf dem das Ergebnis der Stückprüfung (Maßgabe 1) bestätigt und die Herstellernummer angegeben sein muß.
3. Die Color Video Projectoren sind deutlich sichtbar und dauerhaft mit dem Kennzeichen

BW/445/94/Rö

zu versehen, sowie mit einem Hinweis folgenden Mindestinhaltes:

"Die in diesem Gerät entstehende Röntgenstrahlung ist ausreichend abgeschirmt.


Beschleunigungsspannung maximal 33,3 kV".

4. Jedem Color Video Projector ist eine Betriebsanleitung beizufügen, in der insbesondere auf die dem Strahlenschutz dienenden Maßnahmen hingewiesen wird.

Hinweis für den Benutzer des Gerätes:

Unsachgemäße Eingriffe, insbesondere verändern der Hochspannung oder Auswechseln der Bildröhren können dazu führen, daß Röntgenstrahlung in erheblicher Stärke auftritt. Ein so veränderter Color Video Projector entspricht nicht mehr dieser Zulassung und darf infolgedessen nicht mehr betrieben werden.

Die vor Ablauf der Frist in Verkehr gebrachten Geräte dürfen nach Ablauf der Frist weiter betrieben werden.

  
B ö h m



Die geforderte Stückprüfung hat ergeben, daß die gemessene Ortsdosis-Leistung unter dem im Prüfungsschein Nr. 6.22-S1189 der PTB genannten Wert von 0,2 µSv/h liegt.

## WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

## AVERTISSEMENT

Pour prévenir tout risque d'incendie ou d'électrocution, garder cet appareil à l'abri de la pluie et de l'humidité.

Pour prévenir tout risque d'électrocution, ne pas ouvrir le boîtier. Confier l'entretien de cet appareil exclusivement à un personnel qualifié.

## VORSICHT

Um Feuergefahr und die Gefahr eines elektrischen Schlags zu vermeiden, setzen Sie das Gerät weder Regen noch sonstiger Feuchtigkeit aus.

Um einen elektrischen Schlag zu vermeiden, öffnen Sie das Gehäuse nicht. Überlassen Sie Wartungsarbeiten stets nur qualifiziertem Fachpersonal.

## ADVERTENCIA

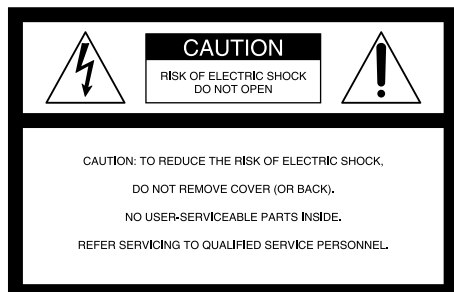
Para prevenir el riesgo de incendios o de electrocución, no exponga la unidad a la lluvia ni a la humedad.

Para evitar descargas eléctricas, no abra la unidad. En caso de avería, solicite el servicio de personal cualificado únicamente.

## ATTENZIONE

Per evitare il pericolo di incendi o scosse elettriche, non esporre l'apparecchio alla pioggia o all'umidità e non aprirlo.

Per eventuali riparazioni, rivolgersi esclusivamente a personale qualificato.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## For the customers in the USA

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

## Für Kunden in Deutschland

Dieses Produkt kann im kommerziellen und in begrenztem Maße auch im industriellen Bereich eingesetzt werden. Dies ist eine Einrichtung, welche die Funk-Entstörung nach Klasse B besitzt.

## For the customers in the United Kingdom

### WARNING

### THIS APPARATUS MUST BE EARTHED

### IMPORTANT

This wires in this mains lead are coloured in accordance with the following code:

Green-and-Yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol Y or coloured green or green-and-yellow. The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

## Voor de klanten in Nederland



Bij dit product zijn batterijen geleverd. Wanneer deze leeg zijn, moet u ze niet weggooien maar inleveren als KCA.

The socket-outlet should be installed near the equipment and be easily accessible.

The instructions in this manual are for the VPH-V20U (for the USA and Canada) and the VPH-V20M/VPH-V22M (for European countries). Before you start operating, please check your model number.

There are no differences between these models in operation. The differences in specifications are indicated on page 29. The illustrations used in this manual are of the VPH-V22M.

You can change the on-screen display language if you prefer German, French, Italian or Spanish. To change the language, see page 17 or the supplement attached to this manual.

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## On safety

- Check that the operating voltage of your unit is identical with the voltage of your local power supply. If voltage adaptation is required, consult with qualified Sony personnel.
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it further.
- Unplug the unit from the wall outlet or set the MAIN POWER switch to OFF if it is not to be used for several days.
- To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- The wall outlet should be near the unit and easily accessible.
- The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.

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## On installation

- When the projector is mounted on the ceiling, the Sony PSS-722/PSS-10 projector suspension support must be used for installation. Read the installation manual of the PSS-722/PSS-10 carefully, since the ceiling should be reinforced for safety.
- Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes. Leave space of more than 30 cm (12 inches) between the wall and the projector. Be aware that room heat rises to the ceiling; check that the temperature near the installation location is not excessive.
- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust or humidity, mechanical vibration or shock.
- To avoid moisture condensation, do not install the unit in a location where the temperature may rise rapidly.
- Fans are installed inside the projector to prevent internal heat build-up. The fans produce a humming noise when the power is switched on, which is normal. Should the noise sound abnormal, please consult qualified Sony personnel.

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## On illumination

- To obtain the best picture, the front of the screen should not be exposed to direct lighting or sunlight.
- Ceiling-mounted spot lighting is recommended. Use a cover over fluorescent lamps to avoid lowering contrast ratio.
- Cover any windows that face the screen with opaque draperies.
- It is desirable to install the projector in a room where floor and walls are not of light-reflecting material. If the floor and walls are of reflecting material, it is recommended that the carpet and wall paper be changed to a dark color.

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## On cleaning

- To keep the cabinet looking new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents, such as thinner or benzene cleansers, since these will damage the cabinet.
- Avoid touching the lens. To remove dust on the lens, use a soft dry cloth. Do not use a damp cloth, detergent solution, or thinner.

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## On CRT burns

When a static picture of a VCR or a computer is displayed for more than about one hour, a CRT burn may result. This means that an after-image impression of the static picture remains on the screen even after the picture has changed. If it is necessary to display the same static picture for more than one hour, we recommend that you set the CONTR (contrast) control to the lowest setting.

Also, when a picture of different size is displayed beyond a certain length of time, an after-image impression of the frame of smaller picture may be burnt on the screen (such as displaying a 16:9 picture on a 4:3 screen.) To avoid this, we recommend that you use the same picture size when possible. However, if it is necessary to use a different picture size, set the CONTR (contrast) control and the BRT (brightness) control of the smaller picture to the lowest setting possible. This will minimize the risk of creating an after-image impression.

If the CRT burns, it must be replaced. In this case, refer to the warranty provided with this unit. Consult your Sony dealer or Qualified Service Personnel.

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## On repacking

Save the original shipping carton and packing material; they will come in handy if you ever have to ship your unit. For maximum protection, repack your unit as it was originally packed at the factory.

# Features

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## Bright image—light output of 750 lumen

A newly developed phosphor and electron gun provide a high-quality image with extra sharpness and brightness.

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## Clear color reproduction—high-quality circuit

A high-quality picture is obtained by combining the use of a three-line logical comb filter to reduce dot interference and cross color, and the use of a new chroma transient circuit to improve color sharpness by removing color blur.

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## Component signal input

The projector is equipped with a component signal input to accept high-quality video format component signals used for TV broadcasting services including program production.

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## Wireless and wired remote control

You can operate your projector from a distance with the supplied remote commander. You can also use the commander as a wired commander by connecting it with a remote (stereo or monaural) control cable (not supplied) to the projector.

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## Illuminated remote commander and control panel

When you press the LIGHT button on the remote commander or you open the control panel cover, the key indicators are illuminated for proper operation in low light.

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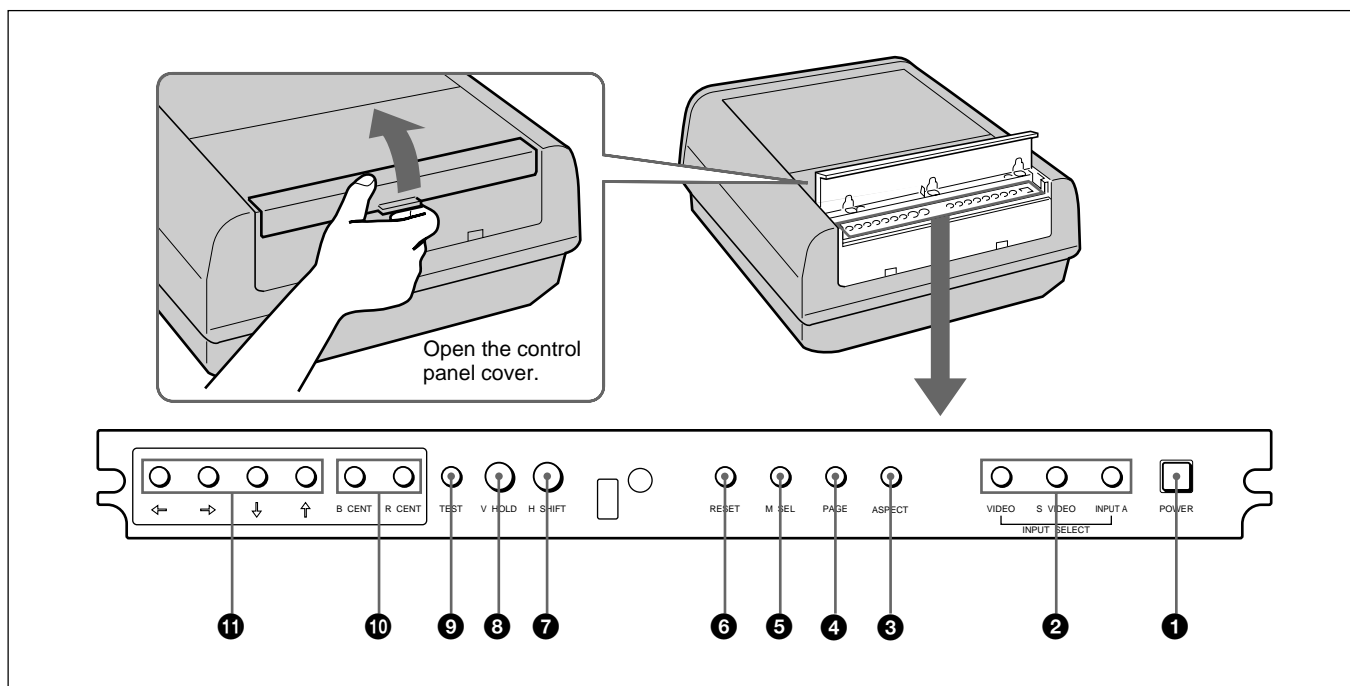
## Other features

- Four color systems available  
The PAL, SECAM, NTSC or NTSC4.43 color system is selected automatically.
- Various installation possibilities  
The projector is designed to be installed on a desk, the floor or the ceiling and can be used with a flat screen or rear projection screen.
- Internal test signal  
The centering adjustment can be performed easily by projecting the built-in cross-hair test signal. No external test signal is needed.



# Location and Function of Controls

## Control Panel



### ❶ POWER switch

Press to turn the projector on and off.

### ❷ INPUT SELECT buttons

Press to select the input signal.

**VIDEO connector (BNC):** to select the signal input from the VIDEO IN VIDEO connectors

**S VIDEO connector (4-pin mini DIN):** to select the signal input from the VIDEO IN S VIDEO connectors

**INPUT A:** to select the signal input from the INPUT A connectors

### ❸ ASPECT button

Press to switch the aspect ratio between 4:3 picture and 16:9 picture.

### ❹ PAGE button

Press to display three on-screen displays. You can check and change various control settings. Each time you press the button, the following display appears: USER PRESET, PICTURE CONTROL and SYSTEM PRESET.

### ❺ M SEL (memory select) button

Press to select the memory position of the picture adjustment levels.

### ❻ RESET button

Press to restore the picture adjustment levels to the standard levels. The button functions while the PICTURE CONTROL display or the adjustment level is displayed on the screen.

### ❼ H SHIFT (horizontal shift) control

Turn to adjust the horizontal position of the RGB input picture.

### ❽ V HOLD (vertical hold) control

If the picture rolls vertically, turn to stabilize the picture.

### ❾ TEST button

Press to display the test pattern to check the centering of the three colors, red, green and blue. To restore the normal screen, press it again.

### ❿ R/B CENT buttons

Press to enter the red and blue centering adjustment mode.

**R CENT:** to enter the red centering adjustment mode.

**B CENT:** to enter the blue centering adjustment mode.

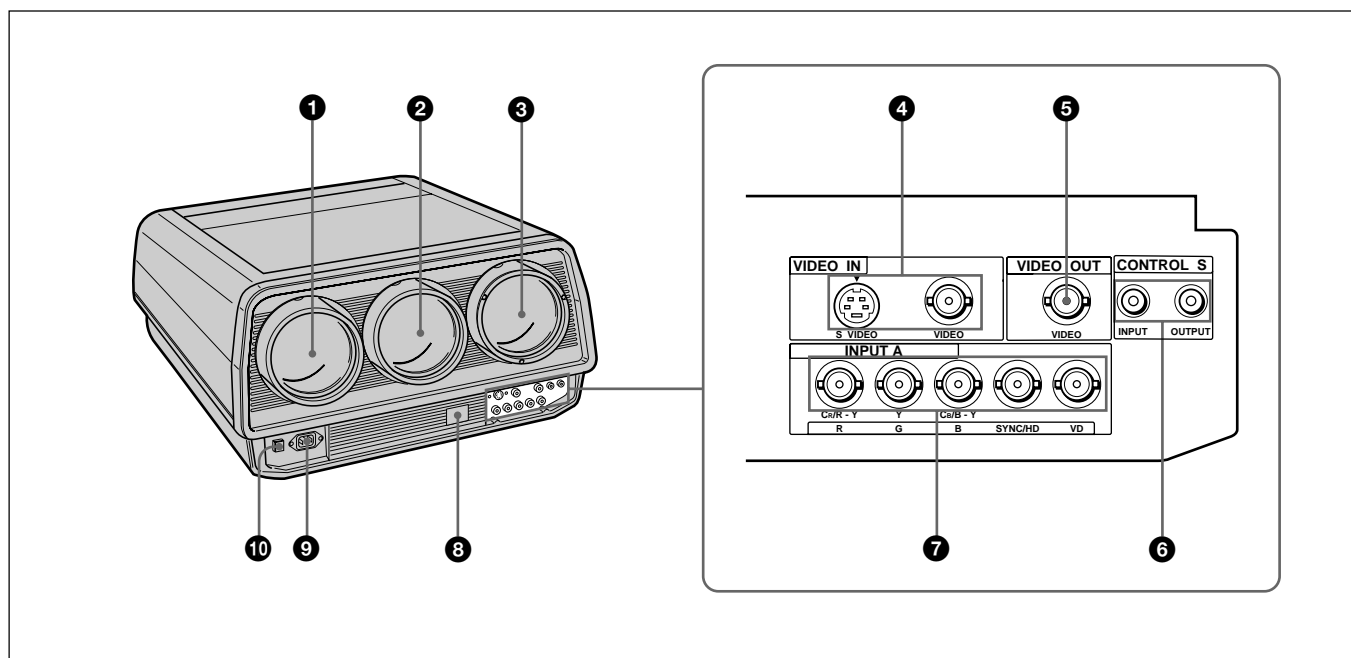
To perform the centering adjustment, use the four arrow buttons.

To return to the normal display, press the same button again.

### ⓫ Arrow buttons

Use these buttons for various adjustment functions.

## Front (Connector Panel)



**1 Red lens**

**2 Green lens**

**3 Blue lens**

**4 VIDEO IN connectors**

**S VIDEO connector (4-pin mini DIN):** Connect to the S video output of a VCR.

**VIDEO connector (BNC):** Connect to the video output of a VCR.

**5 VIDEO OUT connector (BNC)**

Connect to the video input of a color monitor.

**6 CONTROL S jacks**

**INPUT (stereo minijack):** Connect to the CONTROL S OUTPUT jack of other Sony equipment. If you connect to the CONTROL S OUT jack of the supplied remote commander with the remote control (stereo or monaural) cable (not supplied), you can use the commander as a wired commander.

**OUTPUT (stereo minijack):** The signal from the CONTROL S INPUT jack is output. Connect to the CONTROL S INPUT jack of another projector when two or more projectors are used.

**7 INPUT A connectors (BNC)**

**R, G, B, SYNC/HD, VD connectors:** Connect to the analog RGB outputs of a video camera or other video equipment.

**CR/R-Y, Y, CB/B-Y connectors:** Connect to video equipment that output component signals, such as Sony Betacam or DVD player.

**8 Remote sensor**

**9 AC IN socket**

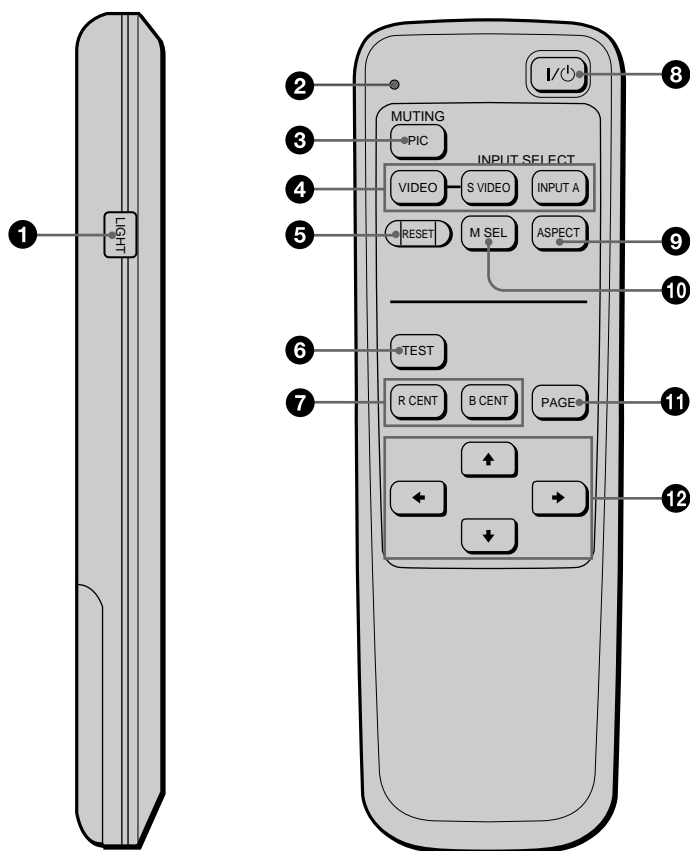
Connect the supplied AC power cord (mains lead).

**10 MAIN POWER switch (ON/OFF)**

Press to turn the main power on and off.

## Remote Commander RM-PJV20

The remote commander may be used as a wired or wireless remote commander. The buttons with the same names as those on the control panel also have the same functions.



### ❶ LIGHT button

Press to light the button indicators.

To turn off the light, press it again while they are lit.

If you do not operate any button within about 30 seconds, the light automatically turns off.

### ❷ Transmitter indicator

The light turns on each time a button is pressed. When the indicator does not light, replace the batteries.

### ❸ MUTING button

**PIC (picture):** Press to cut off the picture. To restore the picture, press it again.

### ❹ INPUT SELECT buttons

### ❺ RESET button

### ❻ TEST button

### ❼ R/B CENT buttons

### ❽ I/⏻ (power on/standby) button

Press to turn the projector on and off.

### ❾ ASPECT button

### ❿ M SEL (memory select) button

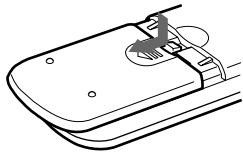
### ⓫ PAGE button

### ⓬ Arrow buttons

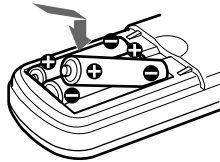
## Location and Function of Controls

### Battery installation

- 1 Push and slide to open the lid.



- 2 Install three R6 (AA) batteries with the correct polarity.



- 3 Replace the lid.

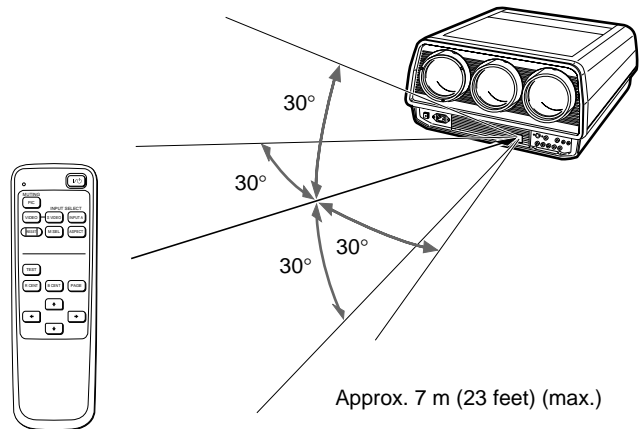
#### Notes

- If the projector does not operate properly, the batteries might be worn out. Replace all three of them with new batteries.
- The life of the batteries depends on frequency of usage and how often you use the LIGHT button. If they wear out quickly, replace them with new alkaline batteries.
- To avoid damage from possible battery leakage, remove the batteries when the remote commander will not be used for a long time.

#### Notes on wired commander operation

Even if the remote commander is connected to the CONTROL S IN jack of the projector via the remote control cable (not supplied), the power is not supplied to the remote commander from the projector. Install the batteries in the battery compartment when you use the remote commander as a wired remote commander.

### Operable range of wireless remote control operation



#### Notes

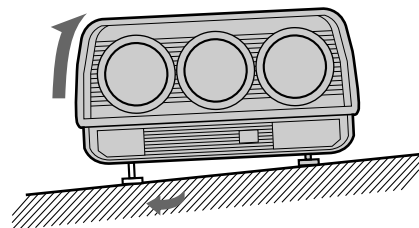
- Be sure that there are no obstructions between the remote commander and the projector.
- Operable range is limited. The shorter the distance between the remote commander and the projector, the wider the angle within which the remote commander can control the projector.

### Using the Adjusters

You can adjust the horizontal tilt and the angle of the projector by turning the adjusters. The adjusters are set to the shortest length at the factory.

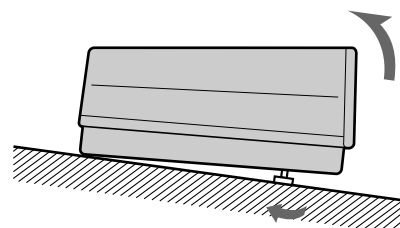
#### To adjust the horizontal tilt

Turn either adjuster to obtain horizontal balance.

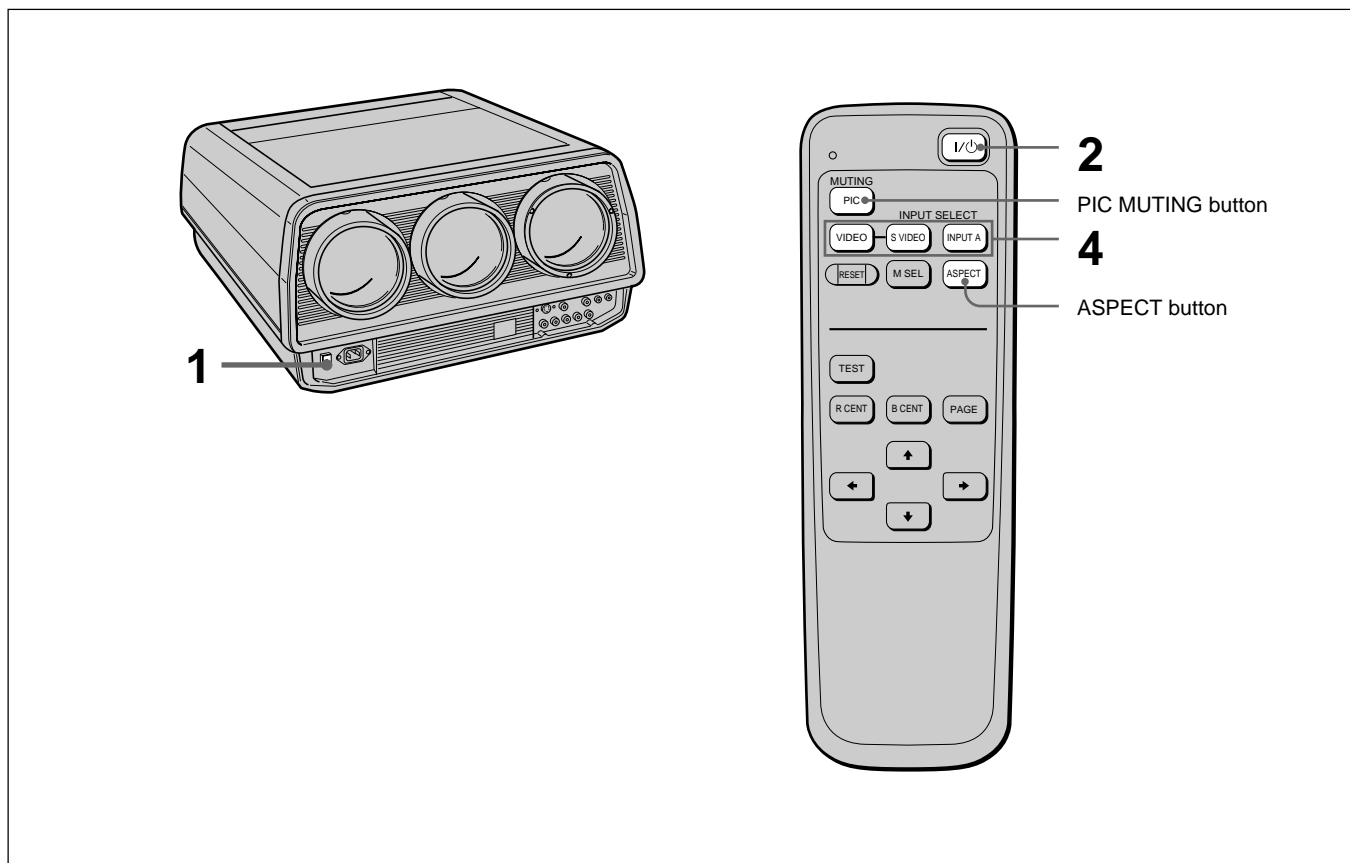


#### To adjust the angle

Turn both adjusters to adjust the angle.



You can also use the buttons on the control panel with the same names as those on the remote commander to operate the projector.



- 1** Press down the MAIN POWER switch of the projector (■ ON).
- 2** Turn on the power by pressing the I/O (power on/standby) button.
- 3** Turn on the connected equipment.
- 4** Press the INPUT SELECT button to select the input signal to be projected.

**VIDEO:** to select the signal input from the VIDEO IN VIDEO connector

**S VIDEO:** to select the signal input from the VIDEO IN S VIDEO connector

**INPUT A:** to select the signal input from the INPUT A connectors  
To project the RGB or component signal, press the PAGE button until the SYSTEM PRESET display appears. Press the ▲ or ▼ button to select INPUT A and select RGB or COMPONENT with the ◀ or ▶ button.

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### To turn off the power

#### To turn off the projector

Press the I/⏻ button or the MAIN POWER switch on the projector.

If the projector is turned off with the MAIN POWER switch, the projector is turned on again only by the MAIN POWER switch.

#### To turn off the main power

Press the MAIN POWER switch on the projector.

If you turn off the main power with the I/⏻ button and the MAIN POWER switch, the projector is in standby mode when you press the MAIN POWER switch. Press the I/⏻ button to turn on the projector.

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### To switch the aspect ratio

Press the aspect button.

When inputting 16:9 (squeezed) signal from equipment such as a DVD player, set to 16:9.

**4:3** When the picture with ratio 4:3 is input.

**16:9** When the picture with ratio 16:9 (squeezed) is input.

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### To cut off the picture

Press the PIC MUTING button.

To restore the picture, press the PIC MUTING button again.

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### If the picture rolls vertically

Turn the V HOLD control on the projector until the picture stabilizes.

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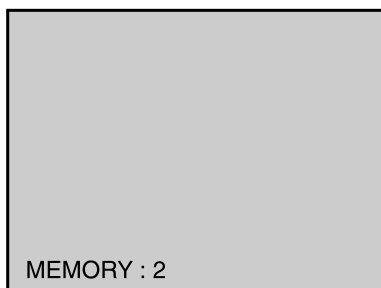
### To adjust the horizontal position of the RGB input picture

Turn the H SHIFT control until the picture fits the screen.

## Adjusting the Picture

Three adjustment level patterns for the video and component input pictures and one pattern for the RGB input picture, respectively, are stored in the projector's memory. You can recall them by pressing the M SEL button.

- 1 Press the M SEL button to select the memory position 1, 2 or 3.  
The current memory position is displayed.



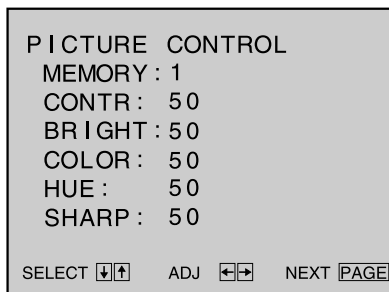
Each time you press the button, the memory position changes as follows: MEMORY 1 → MEMORY 2 → MEMORY 3 → MEMORY STD (standard).

In the MEMORY STD position, the adjustment levels are preset to the standard levels set at the factory, and you can not change them.

### Note

When the input signal is RGB, the memory position changes as follows: MEMORY 1 → MEMORY STD.

- 2 Press the PAGE button to display the PICTURE CONTROL display.
- 3 Select a item you want to change with the ▲ or ▼ button.
- 4 Adjust the item with ◀ or ▶ button.  
The adjustment levels are digitally displayed on the screen having a range of MIN, 1, 2,..., 98, 99, MAX.



	Press the ▶ button	Press the ◀ button
CONTR	to increase picture contrast	to decrease picture contrast
BRIGHT	to make the picture brighter	to make the picture darker
COLOR	to increase color intensity	to decrease color intensity
HUE	to make skin tones greenish	to make skin tones purplish
SHARP	to make the picture sharper	to make the picture softer

The adjustment levels are stored in the selected memory position.

### Notes

- The COLOR, SHARP and HUE controls do not function when the input signal is RGB or when no signal is input.
- The HUE control does not function when the input signal is PAL or SECAM.
- The COLOR and HUE controls do not function when the input signal is black and white.

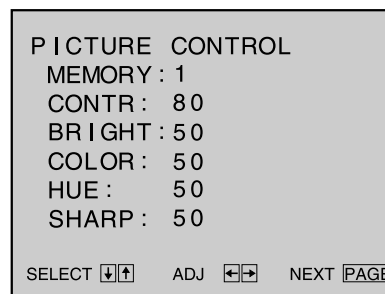
## To recall the picture adjustment levels stored in the memory position

Press the M SEL button.  
The current memory position is displayed.

Each time you press the button, you can select the following memory positions : MEMORY 1 → MEMORY 2 → MEMORY 3 → MEMORY STD

## To restore the factory preset level

Press the RESET button while the PICTURE CONTROL display is displayed.  
The factory preset level is displayed.



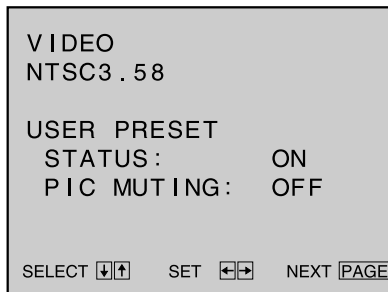
## When you select the MEMORY STD position

You can obtain the picture with the standard levels for all the adjustment items. The standard levels are the same as those obtained when you press the RESET button.

## Displaying the Current Control Settings

Press the PAGE button to display the following on-screen displays. You can change various settings on these displays. Each time you press the PAGE button, the display switches as follows: USER PRESET → PICTURE CONTROL → SYSTEM PRESET.

### USER PRESET



#### VIDEO (S VIDEO, RGB, COMPONENT)

Current input signal

#### NTSC3.58 (NTSC4.43, PAL, SECAM, B & W)

Current input color source

#### STATUS: ON/OFF

On-screen display does not appear in OFF mode.

#### PIC MUTING: ON/OFF

The picture does not appear in ON mode.

The items that do not function with the current input signal do not appear on the display.

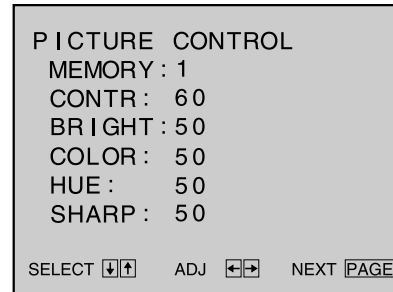
To change the settings, select the item with the ▲ or ▼ button and change it with the ◀ or ▶ button.

#### Note

When the STATUS is set to OFF, no message appears on the screen. Therefore, there is no picture on the screen when no signal is input or when the PIC MUTING is set to ON. This is not a malfunction. Press the PAGE button to confirm the current control settings.

Be careful to leave the power on when no picture appears on the screen.

### PICTURE CONTROL



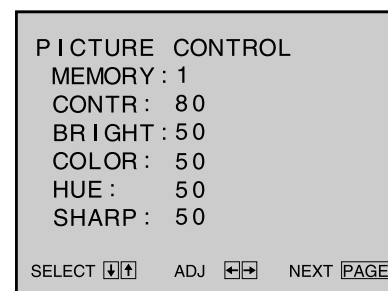
The current picture condition of each memory position, contrast, brightness, color, hue and sharpness, is displayed. The controls that do not function with the current input signal do not appear on the display.

To check other memory positions, press the ▲ or ▼ button to select MEMORY and select the desired memory position with the ◀ or ▶ button.

To adjust the picture adjustment levels, select the item with the ▲ or ▼ button (the selected item is colored yellow) and adjust it with the ◀ or ▶ button. For details on adjustment, see page 15.

### To restore the factory preset levels for all the items

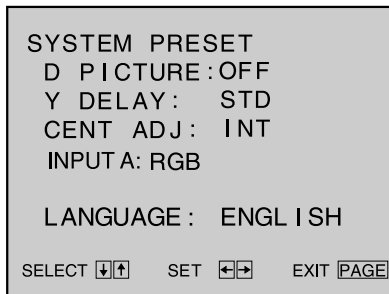
Press the RESET button while the PICTURE CONTROL display is displayed. The factory preset levels for all the items are displayed.





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## SYSTEM PRESET



### D PICTURE

**ON:** to enhance the contrast, providing a dynamic image.

**OFF:** to display a dark portion faithfully according to the video source.

### Y DELAY

Luminance and chroma (color) signals may be transmitted with a slight time lag depending on the video equipment. This results in color shift on the displayed picture.

If this happens, adjust the Y DELAY as follows:

**+**: when color shift is to the right

**STD (standard):** Normally set to this position.

**-**: when color shift is to the left

### CENT ADJ

Set when you perform the centering adjustment.

**INT (internal):** to perform the centering adjustment with the built-in cross-hair test signal

**EXT (external):** to perform the centering adjustment using an external signal

### INPUT A

Select the input signal from the INPUT A connectors.

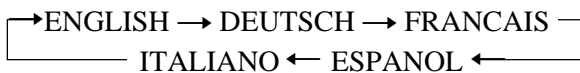
**RGB:** to select the RGB signal

**COMPONENT:** to select the component signal

### LANGUAGE

Select the on-screen display language if you prefer German, French, Italian or Spanish to English.

Each time you press the **▶** button, the language changes as follows:



Pressing the **◀** button changes the language in reverse.

After selecting the language, press the **▲** or **▼** button.

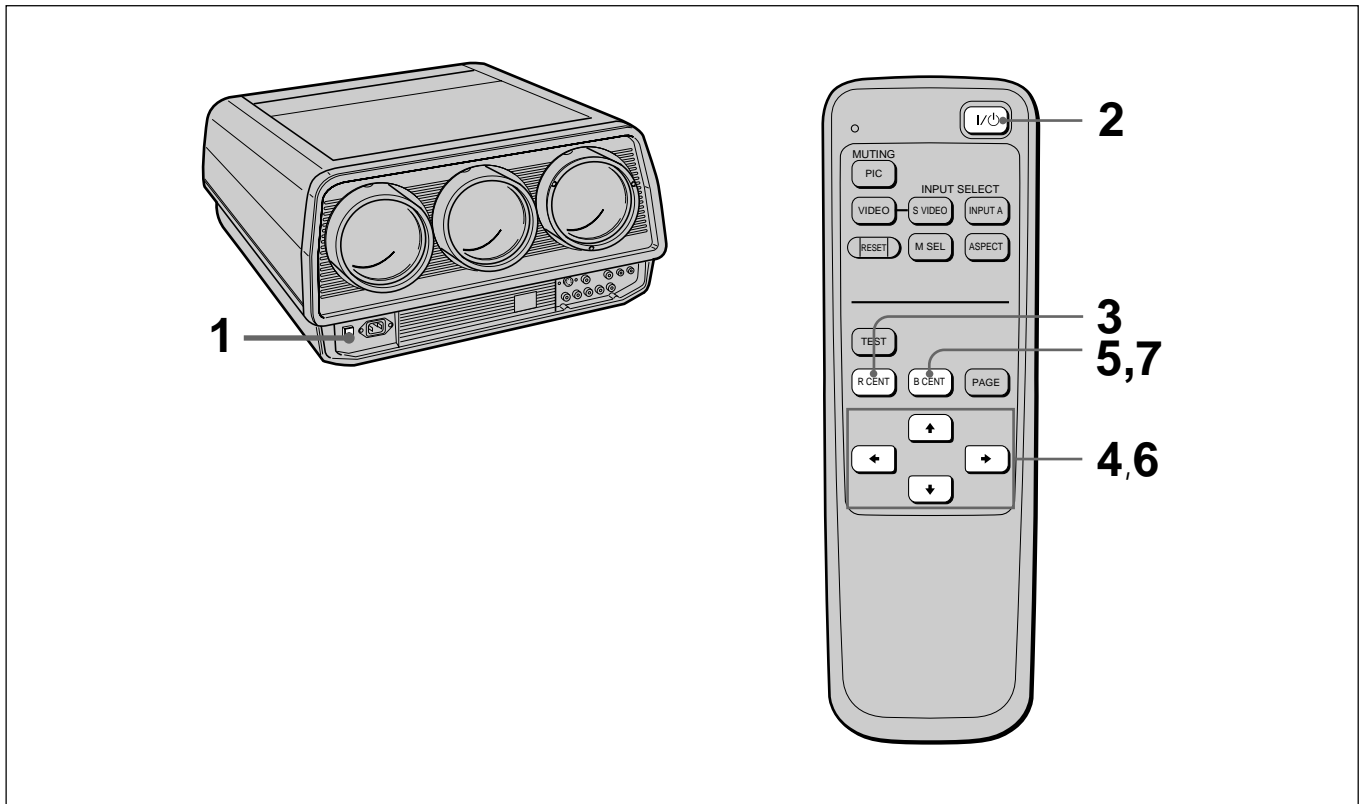
An on-screen display in the selected language appears.

# Centering Adjustment

The three colors, red, green and blue, must converge for proper projection. If you move the projector to another location, you have to perform the centering adjustment.

The following are the procedures for using a built-in test pattern.

You can also perform the centering adjustment using an external test signal without displaying a test pattern. To use an external signal, change the CENT ADJ setting on the SYSTEM PRESET page. (See page 17.)

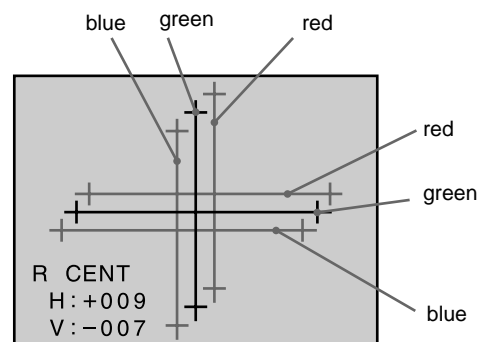


**1** Press down the MAIN POWER switch of the projector.

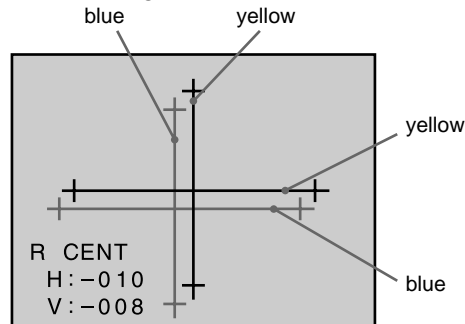
**2** Turn on the power by pressing the I/⏻ button.

**3** Press the R CENT button.

The built-in cross hair test pattern is displayed and you can adjust the red lines.

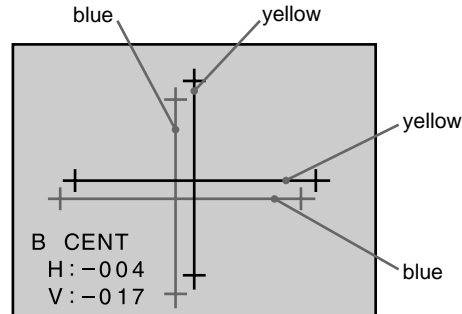


- 4** Press the arrow buttons to move the horizontal and vertical red lines until they converge with the center green lines and are seen as yellow. The red lines move according to the direction of the arrow.

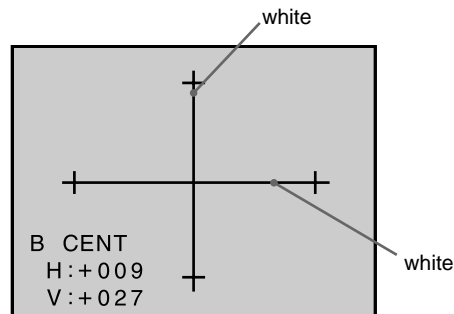


**H:** Horizontal adjustment level (MIN, -126 - +126, MAX)  
**V:** Vertical adjustment level (MIN, -126 - +126, MAX)

- 5** Press the B CENT button.  
You can adjust the blue lines.



- 6** Press the arrow buttons to move the horizontal and vertical blue lines until they converge with the yellow lines. When all three color lines converge, the test pattern is seen as white.



- 7** Press the B CENT button.  
The adjustment levels are stored and the normal display is restored.

## To check the current centering condition

Press the TEST button.  
The cross-hair test pattern is displayed.  
To restore the normal display, press the TEST button again.

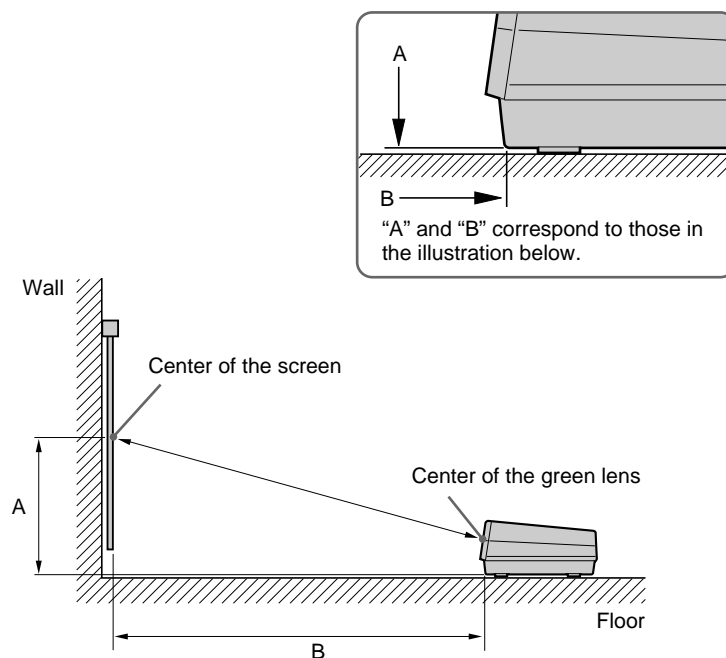
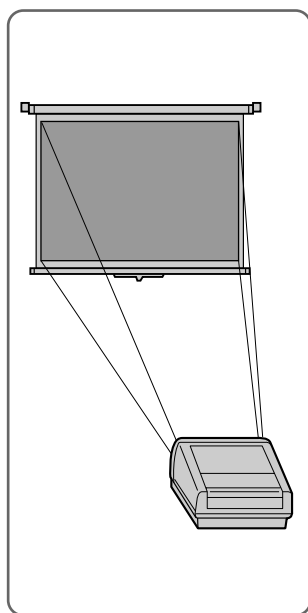
### Note

The test patterns are displayed even when the STATUS in the USER PRESET display is set to OFF, but the adjustment items (R CENT and B CENT), horizontal and vertical adjustment levels are not displayed. Perform the centering adjustment after setting the STATUS to ON.

# Installation Diagrams

Installation and preliminary adjustments should be carried out by qualified Sony personnel.

## Installation 1 Floor Installation Using Front Projection Flat Screen



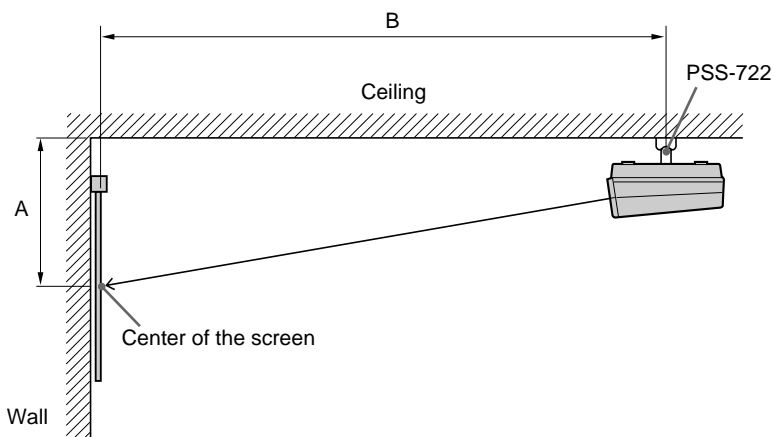
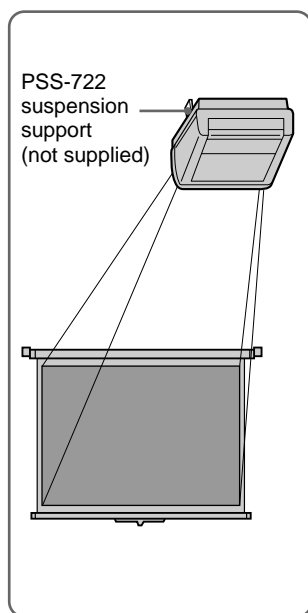
Tolerance in length:  $\pm 1\%$

Screen size (inches)	Unit: mm (inches)	
	A	B
70	674 (26 <sup>5</sup> / <sub>8</sub> )	2,363 (93 <sup>1</sup> / <sub>8</sub> )
72	685 (27)	2,441 (96 <sup>1</sup> / <sub>8</sub> )
80	740 (29 <sup>1</sup> / <sub>4</sub> )	2,681 (105 <sup>5</sup> / <sub>8</sub> )
100*	873 (34 <sup>3</sup> / <sub>8</sub> )	3,301 (130)
120**	1,006 (39 <sup>5</sup> / <sub>8</sub> )	3,923 (154 <sup>1</sup> / <sub>2</sub> )
150	1,214 (47 <sup>7</sup> / <sub>8</sub> )	4,857 (191 <sup>1</sup> / <sub>4</sub> )
180	1,414 (55 <sup>3</sup> / <sub>4</sub> )	5,793 (228 <sup>1</sup> / <sub>8</sub> )
200	1,544 (60 <sup>7</sup> / <sub>8</sub> )	6,417 (252 <sup>3</sup> / <sub>4</sub> )
250	1,884 (74 <sup>1</sup> / <sub>4</sub> )	7,967 (313 <sup>3</sup> / <sub>4</sub> )

\* Sony screen VPS-100FH

\*\* Sony screen VPS-120FH

## Installation 2 Ceiling Installation Using Front Projection Flat Screen



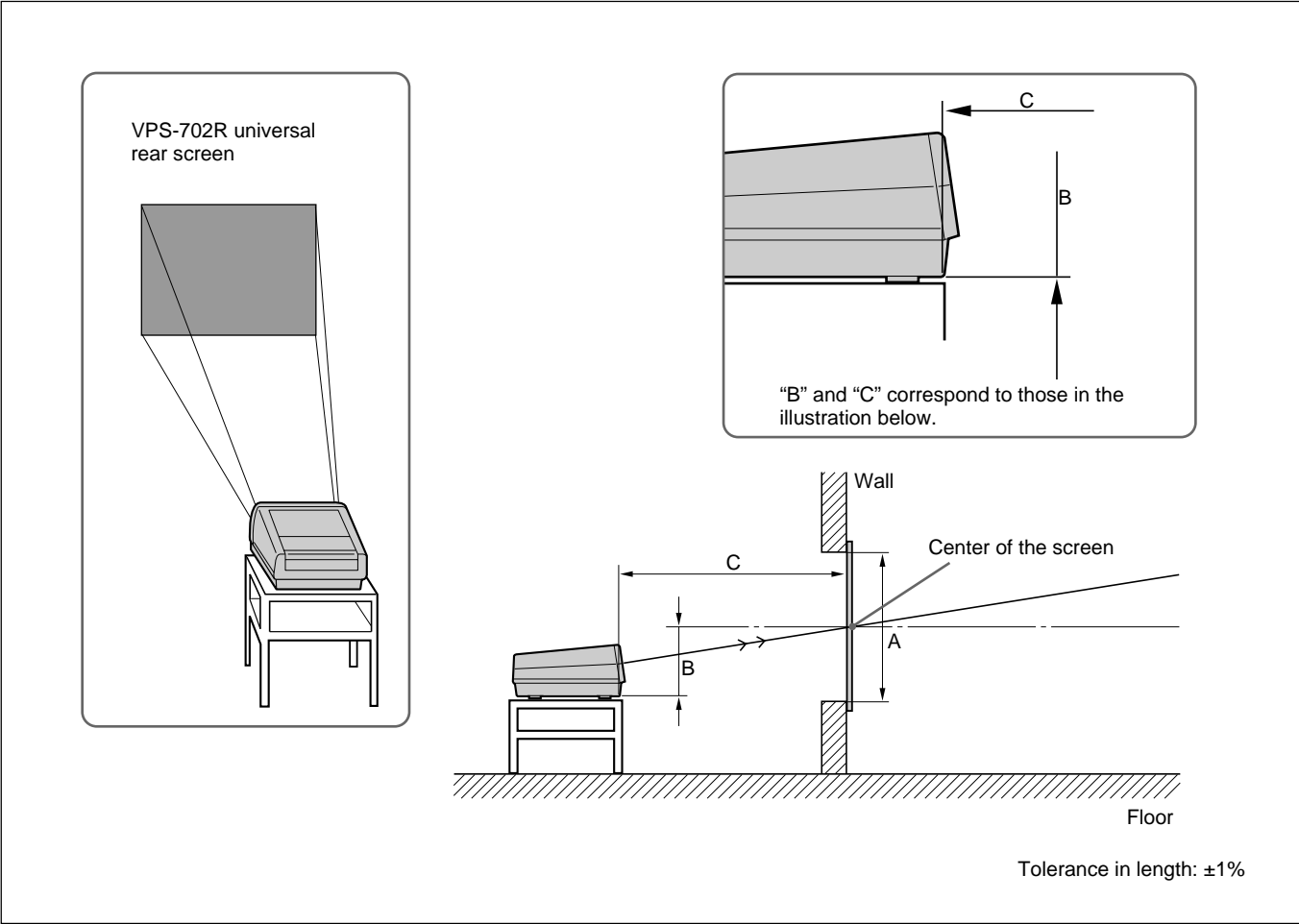
Tolerance in length:  $\pm 1\%$

Screen size (inches)	Unit: mm (inches)	
	A	B
70	813 ( $32\frac{1}{8}$ )	2,614 (103)
72	824 ( $32\frac{1}{2}$ )	2,692 (106)
80	879 ( $34\frac{5}{8}$ )	2,932 ( $114\frac{3}{4}$ )
100*	1,012 ( $39\frac{7}{8}$ )	3,552 ( $139\frac{7}{8}$ )
120**	1,145 ( $45\frac{1}{8}$ )	4,174 ( $164\frac{3}{8}$ )
150	1,350 ( $53\frac{1}{4}$ )	5,108 ( $202\frac{1}{8}$ )
180	1,550 ( $61\frac{1}{8}$ )	6,044 (238)
200	1,680 ( $66\frac{1}{4}$ )	6,668 ( $262\frac{5}{8}$ )
250	2,020 ( $79\frac{1}{4}$ )	8,218 ( $323\frac{5}{8}$ )

\* Sony screen VPS-100FH

\*\* Sony screen VPS-120FH

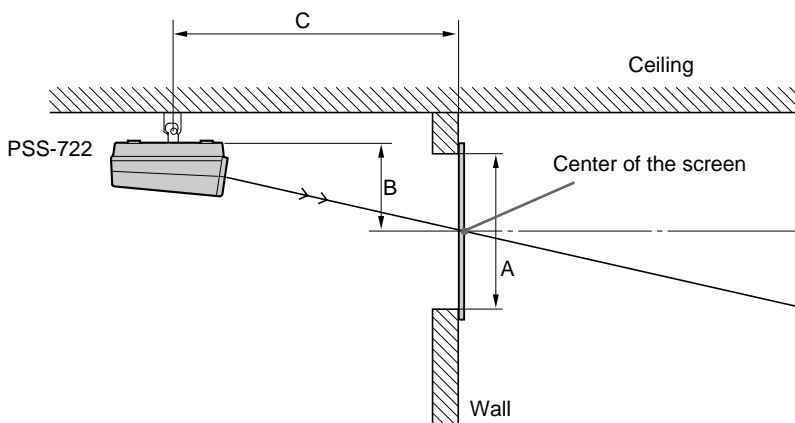
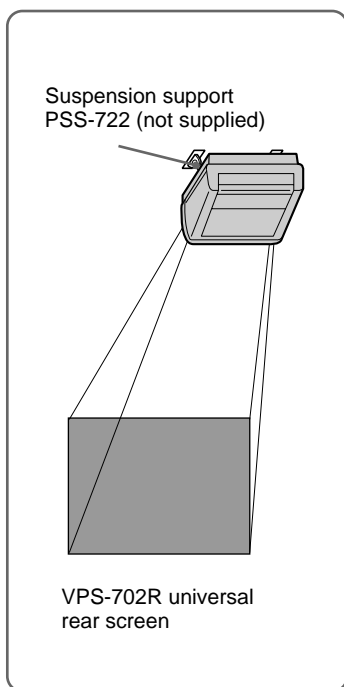
Installation 3 Floor Installation Using Rear Projection



Screen size (inches)	Unit: mm (inches)		
	A	B	C
70*	1,067 (42 1/8)	690 (27 1/4)	2,363 (93 1/8)
100	1,524 (60 1/8)	889 (35)	3,301 (130)

\* Sony screen VPS-702R

## Installation 4 Ceiling Installation Using Rear Projection

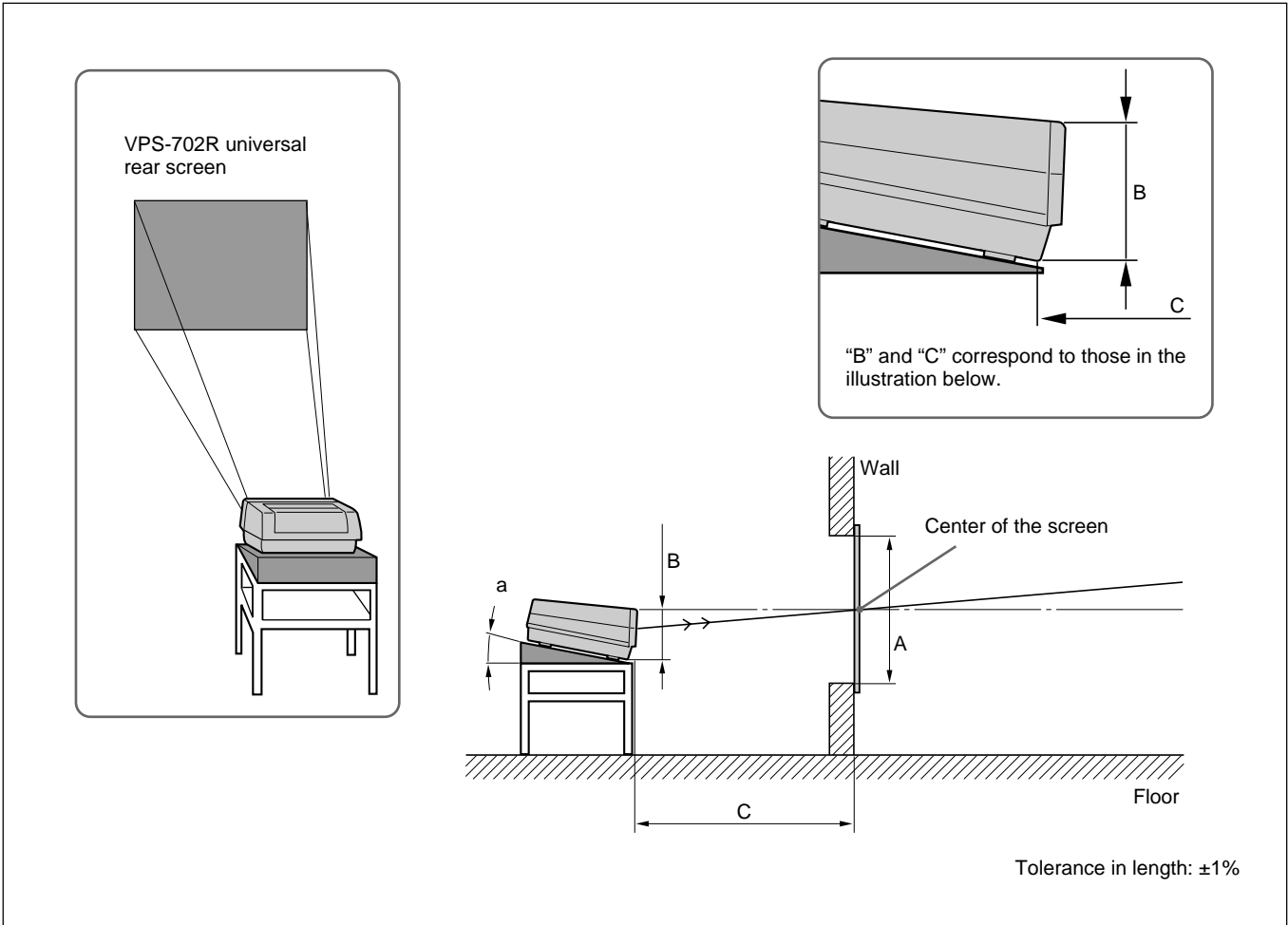


Tolerance in length:  $\pm 1\%$

Screen size (inches)	Unit: mm (inches)		
	A	B	C
70*	1,067 (42 <sup>1</sup> / <sub>8</sub> )	674 (26 <sup>5</sup> / <sub>8</sub> )	2,614 (103)
100	1,524 (60 <sup>1</sup> / <sub>8</sub> )	873 (34 <sup>3</sup> / <sub>8</sub> )	3,552 (139 <sup>7</sup> / <sub>8</sub> )

\* Sony screen VPS-702R

Installation 5    Level Projection, Floor Installation

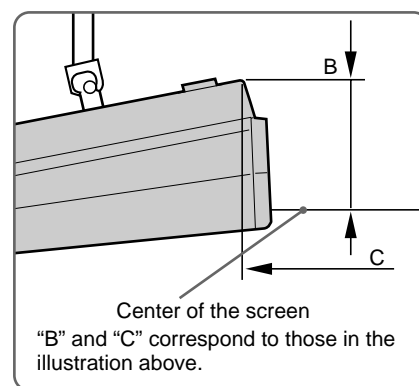
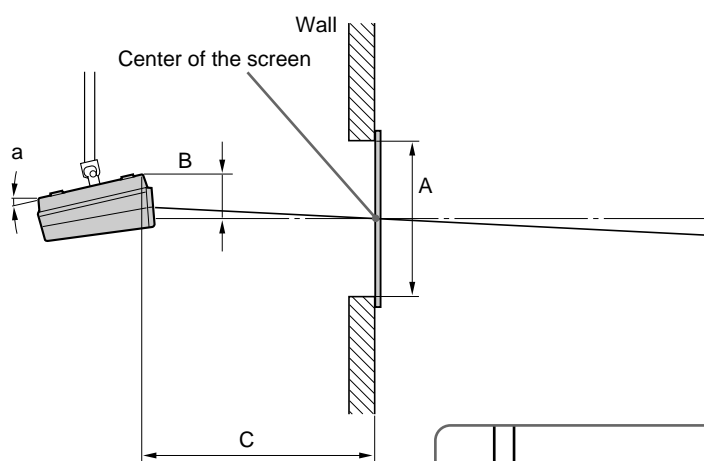
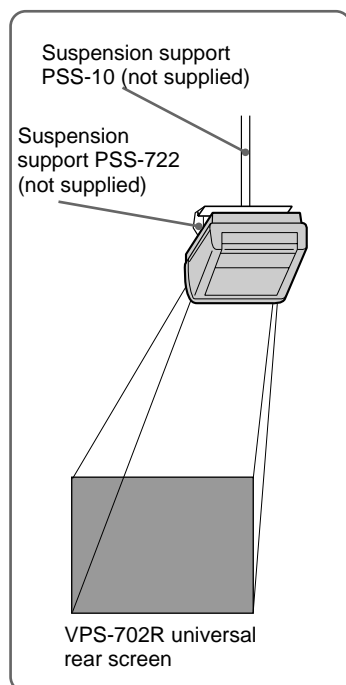


Screen size (inches)	Unit: mm (inches)			Angle (°)
	A	B	C	a
70*	1,067 (42 <sup>1</sup> / <sub>8</sub> )	165 (6 <sup>1</sup> / <sub>2</sub> )	2,439 (96 <sup>1</sup> / <sub>8</sub> )	12
	1,067 (42 <sup>1</sup> / <sub>8</sub> )	676 (26 <sup>5</sup> / <sub>8</sub> )	3,433 (95 <sup>7</sup> / <sub>8</sub> )	10
100	1,524 (60 <sup>1</sup> / <sub>8</sub> )	167 (6 <sup>5</sup> / <sub>8</sub> )	3,402 (134)	12
	1,524 (60 <sup>1</sup> / <sub>8</sub> )	715 (28 <sup>1</sup> / <sub>4</sub> )	3,402 (134)	10

\* Sony screen VPS-702R



## Installation 6 Level Projection, Ceiling Installation



Tolerance in length:  $\pm 1\%$

Screen size (inches)	Unit: mm (inches)			Angle (°)
	A	B	C	b
70*	1,067 (42 <sup>1/8</sup> )	165 (6 <sup>1/2</sup> )	2,439 (96 <sup>1/8</sup> )	12
	1,067 (42 <sup>1/8</sup> )	676 (26 <sup>5/8</sup> )	3,443 (95 <sup>7/8</sup> )	10
100	1,524 (60 <sup>1/8</sup> )	167 (6 <sup>5/8</sup> )	3,402 (134)	12
	1,524 (60 <sup>1/8</sup> )	715 (28 <sup>1/4</sup> )	3,402 (134)	10

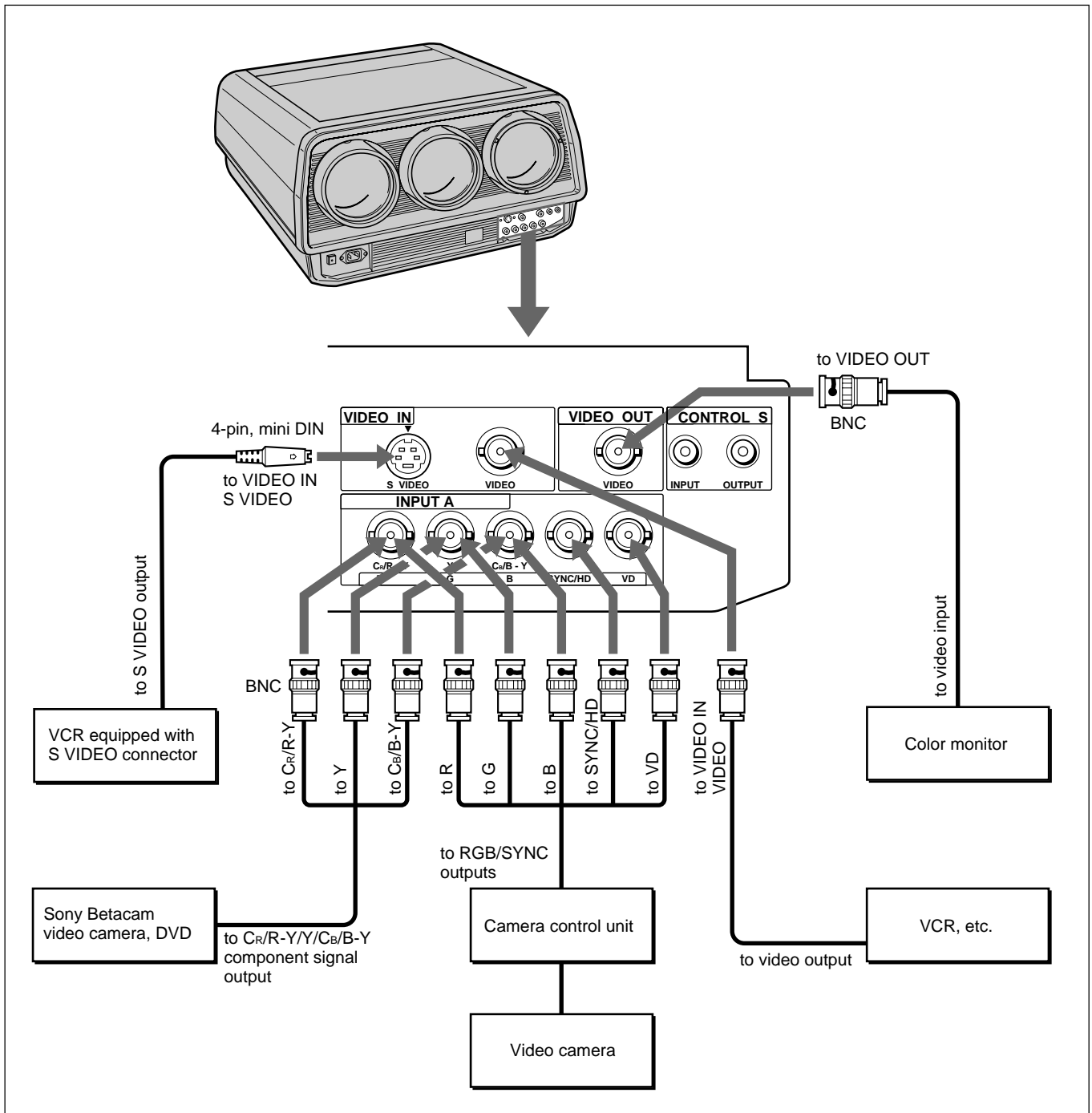
\* Sony screen VPS-702R

# System Connections

## Notes on connections

- First make sure that the power to each piece of equipment is turned off.
- Use suitable connecting cables according to the equipment to be connected.
- The cable connectors should be fully inserted into the connectors of the equipment.
- To disconnect the cable, pull it out by grasping the plug. Never pull the cable itself.
- Refer to the instruction manual of the equipment to be connected.

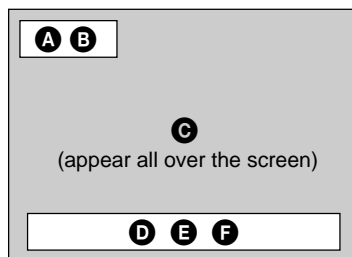
## Connecting to the Projector



# List of the Messages

Use the list below to check the meaning of the messages displayed on the screen.

The list is divided into sections according to the location where the message appears. Check the location first, then refer to the corresponding letter for the section to find the message.



## **A Input channel**

VIDEO	Input from VIDEO IN VIDEO
S VIDEO	Input from VIDEO IN S VIDEO
INPUT A	Input from INPUT A
NO INPUT	No signal is input

## **B Input color source**

NTSC <sub>3.58</sub>	The NTSC <sub>3.58</sub> signal is input.
NTSC <sub>4.43</sub>	The NTSC <sub>4.43</sub> signal is input.
PAL	The PAL signal is input.
SECAM	The SECAM signal is input.
B & W	Black and white signal is input.

## **C PAGE**

USER PRESET	
STATUS: ON/OFF	The on-screen display is displayed or cut.
PIC MUTING: ON/OFF	The picture is cut or displayed.
PICTURE CONTROL	
MEMORY: 1/2/3/STD	Picture adjustment memory position 1, 2, 3 or standard
CONTR	Contrast
BRIGHT	Brightness
COLOR	Color
HUE	Hue
SHARP	Sharpness

(continued)

## List of the Messages

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### SYSTEM PRESET

D PICTURE: ON/OFF	The Dynamic picture feature functions or not.
Y DELAY: +/-/STD	Color shifts left or right, or does not shift.
CENT ADJ: EXT, INT	Centering adjustment is performed with an external test signal or a built-in cross-hair test pattern.
INPUT A: RGB/ COMPONENT	Input signal from the INPUT A connectors is RGB or component.
LANGUAGE: DEUTSCH/ FRANCAIS/ ITALIANO/ ESPANOL	An on-screen display appears in English, German, French, Italian or Spanish.

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### D Operation

SELECT: $\uparrow \downarrow$	Press $\uparrow$ or $\downarrow$ to select.
ADJ: $\leftarrow \rightarrow$	Press $\leftarrow$ or $\rightarrow$ to adjust.
SET: $\leftarrow \rightarrow$	Press $\leftarrow$ or $\rightarrow$ to set.
NEXT: <span style="border: 1px solid black; padding: 0 2px;">PAGE</span>	Press the PAGE button to change to the next page display.
EXIT: <span style="border: 1px solid black; padding: 0 2px;">PAGE</span>	Press the PAGE button to exit the page display mode.

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### E Adjustment/adjustment data

R CENT	Red centering adjustment mode
B CENT	Blue centering adjustment mode
H: xxx	Horizontal adjustment level (xxx=MIN, -126 - +126, MAX)
V:xxx	Vertical adjustment level (xxx=MIN, -126 - +126, MAX)

---

### F Caution, Message

Not Applicable!	The button does not function with the current condition.
PIC MUTING	The PIC MUTING button is pressed.
ASPECT RATIO	The current aspect ratio (4:3 or 16:9) is displayed.

---

If the projector appears to be operating erratically, try to diagnose and correct the problem using the following guide. If the problem still persists, consult with qualified Sony personnel.

## **The power does not turn on.**

- The MAIN POWER switch is turned off.
  - ➔ Press the MAIN POWER switch on the projector (see page 13).

## **Picture does not appear.**

- If the control setting displays appear, external signal is not input correctly.
  - ➔ Check the current input signal in the USER PRESET display and connect it correctly (see page 16).
- The PIC MUTING in the USER PRESET display is set to ON.
  - ➔ Set it to OFF (see page 16).
- If the control setting displays do not appear, there may be an internal problem.
  - ➔ Consult with qualified personnel.

## **Picture is too dark.**

- Contrast is set to minimum.
  - ➔ Adjust the contrast with the ➡ button in the PICTURE CONTROL display.

## **Picture is distorted.**

- The horizontal frequency of an input signal is not acceptable for this projector.
  - ➔ The projector does not accept a signal such as an HDTV signal or an RGB signal (except fH=15 kHz). Input such signals by converting into a video signal (see page 30).
- The picture scrolls vertically.
  - ➔ Turn the V HOLD control on the projector until the picture stabilizes (see page 9).

# Specifications

## Optical Characteristics

Projection system	3 picture tubes, 3 lenses, Direct projection system
Picture tube	7-inch high-brightness monochrome tubes, with coolant sealed
Projection lens	VPH-V20M/V20U High-performance hybrid lenses F1.0/130 mm VPH-V22M HACC (High-resolution Aspherical and Color Corrected) lenses F1.0/135 mm
Projected picture size	Factory-adjusted to 100 inches measured diagonally 70–250 inches measured diagonally adjustable by changing the parts
Light output	Peak: 700 lm ANSI <sup>1)</sup> 100

## Electrical Characteristics

Color system	PAL, SECAM, NTSC and NTSC <sub>4.43</sub> systems, switched automatically
Resolution	700 TV lines (video input) 1,000 TV lines (RGB input)
Test signal	Cross-hair test pattern generator incorporated

## Inputs

VIDEO IN	<p>S VIDEO: 4-pin mini DIN connector Y (luminance) signal: 1 Vp-p±2 dB, sync negative, 75 ohms terminated C (chrominance) signal: burst 0.286 Vp-p±2 dB, 75 ohms terminated (NTSC) 0.3 Vp-p±2 dB, 75 ohms terminated (PAL)</p> <div data-bbox="343 1649 766 1830"> </div> <p>VIDEO: BNC connector Composite video input, 1 Vp-p±2 dB, sync negative, 75 ohms terminated</p>
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## INPUT A

R,G,B: BNC connectors Red, green, blue inputs  
0.7 Vp-p±2 dB, 75 ohms terminated, positive  
SYNC/HD: BNC connector  
Composite sync input, 0.3–4 Vp-p, 75 ohms terminated, negative  
Horizontal sync input, 0.3–4 Vp-p, 75 ohms terminated, negative  
VD: BNC connector  
Vertical sync input, 0.3–4 Vp-p, 75 ohms terminated, negative  
C<sub>R</sub>/R-Y, C<sub>B</sub>/B-Y: BNC connectors  
0.7 Vp-p  
Y: BNC connector  
1.0 Vp-p, sync negative, 75 ohms terminated  
INPUT: Stereo minijack, 5 Vp-p

## CONTROL S

## Outputs

VIDEO OUT	<p>VIDEO: BNC connector Composite video output, 1 Vp-p±2 dB, impedance 75 ohms, output video signal from the VIDEO IN connector * The separated Y and C signals input to the S VIDEO connector is output as a composite video signal.</p>
CONTROL S	OUTPUT: Stereo minijack, 5 Vp-p

## General

Power requirements	<p>VPH-V20U: 120V AC, 50/60 Hz VPH-V20M/V22M: 220–240V AC, 50/60 Hz</p>
Power consumption	<p>VPH-V20U: 230 W max, 3.0 A max. VPH-V20M/V22M: 210 W</p>
Dimensions	<p>Approx. 532×288×597 mm (w/h/d) (21×11<sup>3/8</sup>×23<sup>5/8</sup> inches) With the brackets pushed down, including the projection parts and controls</p>
Mass	<p>VPH-V20M/V20U: Approx. 30 kg (66 lb 2 oz) VPH-V22M: Approx. 38 kg (83 lb 12 oz)</p>

1) ANSI lumen is a measuring method of American National Standard IT 7.215.

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## Accessories supplied

Remote commander RM-PJV20 with  
3 AA (R6) batteries  
AC power cord (1)  
Spacer for 200" front projection (4)  
0.2 mm spacer ① for 70" to 100" (9)  
0.8 mm spacer ⑤ for 70" to 100"  
rear projection (3)

Design and specifications are subject to change  
without notice.

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## Optional accessories

Projector suspension support PSS-722, PSS-10  
Screen VPS-100FH (100" flat)  
VPS-120FH (120" flat)  
VPS-702R (70" rear projection)  
Remote control receiver RM-PJ10  
Remote control cable

